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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,142	10/30/2001	Bardia Pezeshki	47474/DMC/S965	8519

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EXAMINER	
NGUYEN, PHILLIP	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/000,142	PEZESHKI ET AL.	
	Examiner	Art Unit	
	Phillip Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-6,8-40,43-58 and 60-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,4-6 and 8-11* is/are allowed.

6)☒ Claim(s) *12-40,43-54,58 and 60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *55-57,61 and 62* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 8/28/02, 2/14/03, 3/5/03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the Requirement for Restriction/Election mailed on 7/28, applicant has elected group I which is direct to Figures 1-9 and 12. However, applicant has also elected claims 49-54 (direct to the Figure 11), claims 55-57 (direct to Figure 10), and 61-62 (direct to Figures 13 and 14). Therefore, ONLY claims 1-48, 58 and 60 will be examined in this Office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24-31 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Reno ('184) or Yamaguchi et al. ('661) or Kitamura ('422).

With respect to claim 24, Reno discloses in Figure 1a an optical transmission apparatus comprising an array of lasers 10, each laser angled relative to each other; a collimating lens 24 positioned lasers to collimate light from the array of lasers; and an optical element 60 positionable to receive the collimated light from any one of a plurality of lasers in the array lasers and laterally shift the collimated light to fall upon a focusing lens 40, the focusing lens focusing the collimated light into an optical output path.

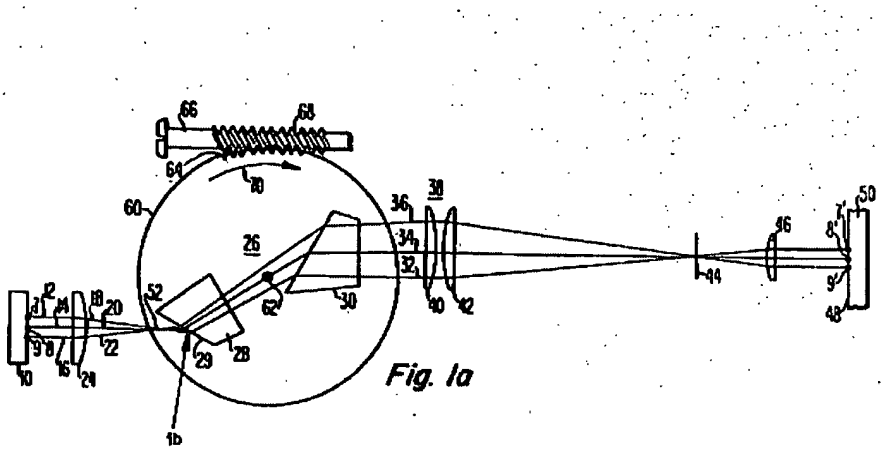
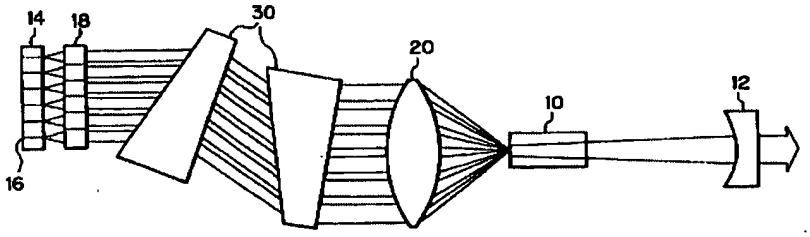


Fig. 1a

With respect to claim 24, Yamaguchi discloses in Figure 5 an optical transmission apparatus comprising an array of lasers 14, each laser angled relative to each other; a collimating lens 18 positioned lasers to collimate light from the array of lasers; and an optical element 30 positionable to receive the collimated light from any one of a plurality of lasers in the array lasers and laterally shift the collimated light to fall upon a focusing lens 20, the focusing lens focusing the collimated light into an optical output path.

Fig. 5



With respect to claim 25-26, 30 and 31, Reno discloses the optical element is rotatable about an axis perpendicular to the array of lasers and is a solid high index block. Reno further includes the optical element shifts the light from the lens.

With respect to claim 24, Kitamura discloses in Figure 7 an optical transmission apparatus comprising an array of lasers 11, each laser angled relative to each other; a collimating lens 13 positioned lasers to collimate light from the array of lasers; and an optical element 14 positionable to receive the collimated light from any one of a plurality of lasers in the array lasers and laterally shift the collimated light to fall upon a focusing lens 15, the focusing lens focusing the collimated light into an optical output path.

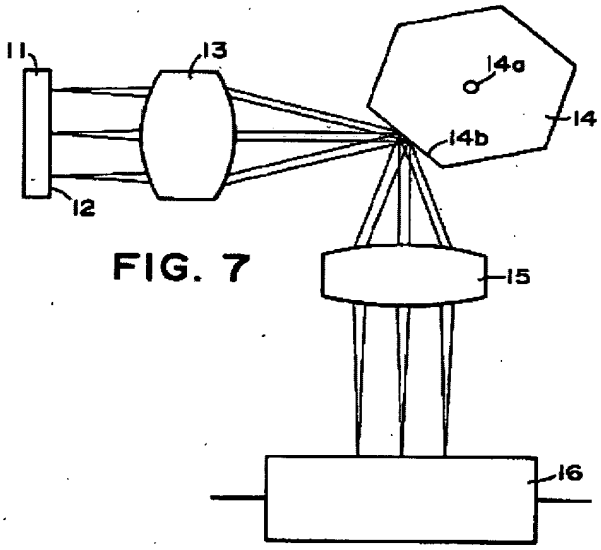


FIG. 7

With respect to claims 27-29, Kitamura discloses the optical element comprises first and second mirrors having a fixed "**angled**" in the same direction and rotatable about an axis **14a** perpendicular to the laser array and simultaneously. It is noted that first and second mirrors are opposite sides of the polygon.

3. Claims 45-48 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mirov et al. ('666) or Lang ('722).

With respect to claim 45, Mirov discloses in Figure 2 an array of lasers; a lens L_2; and an optical element with two opposite sloped sides CR, such that one side reflects light from at least one laser from the array of lasers to another side that reflects light to the lens.

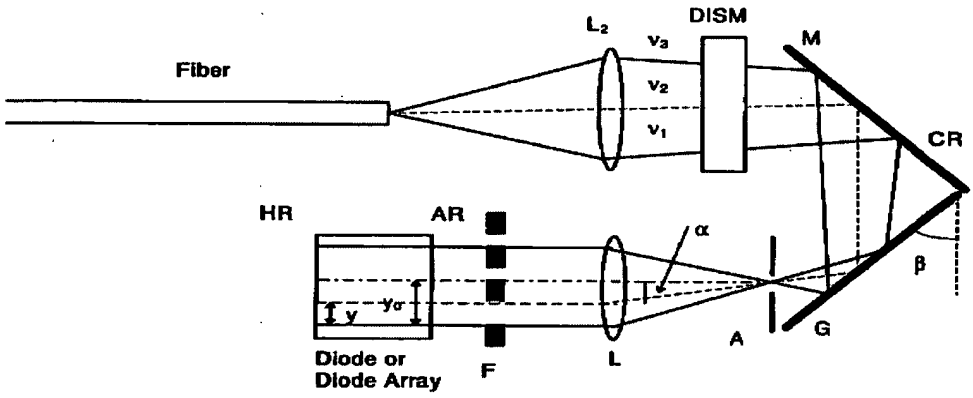


FIG. 2

With respect to claim 45, Lang discloses in Figure 18 an array of lasers 44; a lens 45; and an optical element 30 with two opposite sloped sides 12 and 14, such that one side reflects light from at least one laser from the array of lasers to another side that reflects light to the lens.

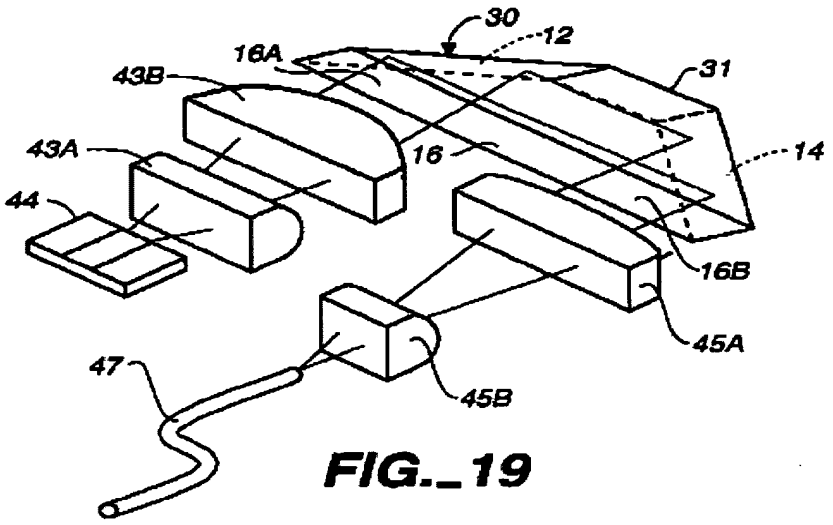


FIG._19

With respect to claims 46-48, Lang discloses the optical element is a prism and the apparatus further comprising an array of lenses 43B each lens in the array of lenses is corresponding to teach laser in the array of lasers, and the sides are sloped in opposite directions to each other.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsen et al. ('542) or Farries et al. ('058) in view of Papen et al. ('310).

With respect to claim 12, Karlsen discloses in Figures 1 and 2 an optical transmission apparatus comprising a laser array 101, a lens 115 collimating light from a laser in the array of lasers; an optical output 111; and a mirror 113, the mirror receives the light collimated by the lens from any of a plurality of lasers in the array of lasers, the mirror reflecting the light back to the lens, which passes the light to the optical output *except* for the mirror being movable.

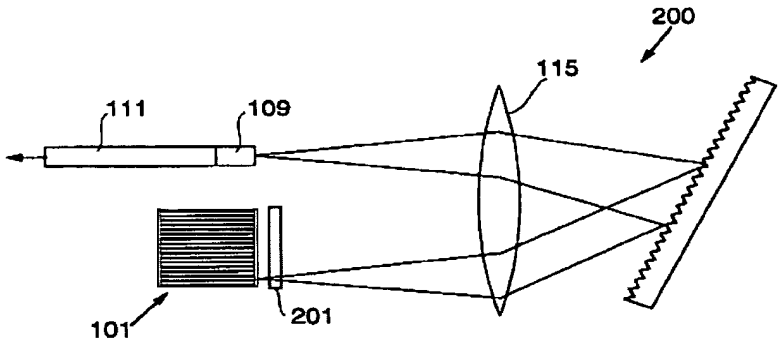
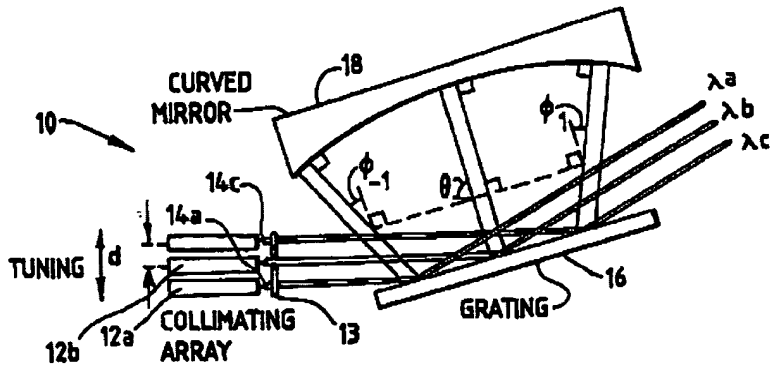


FIG. 2

Papen discloses in Figure 2 an optical apparatus including a laser array 12, a lens 13 collimating light from a laser in the array of lasers; an optical output (output beam); and a movable mirror 16.



For the improvement of the optical transmitter, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide a movable mirror as taught by Papen to Karlsen or Farries in order to tune the wavelengths of the transmitter.

With respect to claims 13 and 19, Papen discloses the mirror is movable about an axis perpendicular to the array of lasers.

With respect to claims 14-20, Karlsen, Farries, and Papen disclose the lens being fixed.

With respect to claims 15-16 and 21-22, Karlsen and Farries disclose the optical output being a fiber (111 or 19, respectively) and the optical output is adjacent to the laser array.

With respect to claims 17 and 23, Karlsen discloses the array of lasers has an emitting end 107 from which light is emitted and the optical output has a receiving end 109 in which reflected light is directed into, such that the receiving end of the optical output and the emitting end of the array of lasers face in substantially the same direction.

With respect to claim 18, Karlsen and Papen disclose the claimed invention as shown in the rejection of claim 12 wherein the mirror is movable so that can be positionable to reflect light at normal incidence from any one of a plurality of lasers in the array to the optical output.

5. Claims 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirov et al. ('666) in view of Edestein et al. ('463).

With respect to claims 32-33, Mirov discloses in Figure 2 an optical transmission apparatus comprising an array of lasers; an optical output path for receiving light from a laser in the array of lasers; and an optical element CR with a portion of volume in the optical element

evacuated to form a first reflective surface G and a second reflective surface M, the optical element reflects light from any one of a plurality of lasers in the array of lasers from the first reflective surface to the second reflective surface to the optical output path except for the optical element is movable. Edelstein discloses an optical device including a roof prism 14 which is movable. For the improvement of the optical transmission apparatus, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide a movable optical element in perpendicular direction to the laser array as taught by Edelstein to Mirov in order to tune the transmission apparatus.

With respect to claims 34-35, Mirov further discloses a focusing lens L2 directing light to an optical output (fiber).

With respect to claim 36, Mirov discloses the optical element being translatable in a direction substantially perpendicular to the fiber.

With respect to claims 37 and 38, it is inherent that the length of the first and second reflecting surfaces is proportional to the number of lasers in order to cover the light beams from all of the lasers.

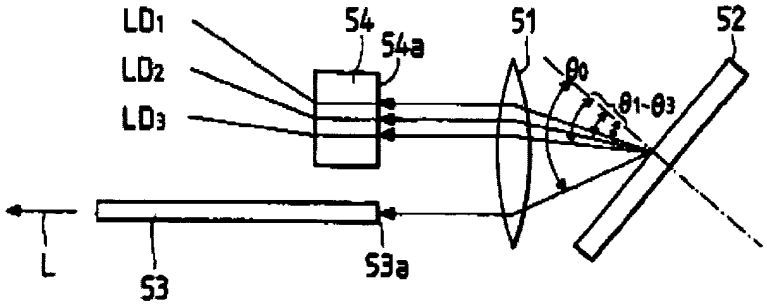
With respect to claim 39, Mirov discloses that the roof prism is rotatable and therefore it has to have an axis in which the prism translates.

With respect to claim 40, Mirov and Edelstein discloses the claimed invention as shown in the rejections of claims 32 wherein the first and second mirrors are G and M and the platform is where the mirrors are mounted to. Since the platform is rotatable, the first mirror can be substantially perpendicular to the array of laser.

With respect to claims 43-44, similarly, since the platform is rotatable, the second mirror can also be translatable in a first direction.

6. Claims 58 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. ('345) in view of Papen et al. ('310). Ota discloses in Figure 18 an optical transmission apparatus comprising an array of lasers 120; a lens 118 positioned to focus an optical beam from the laser array; an optical element 119 "positionable" to receive the focused beam from one of the array of lasers and to direct the focused beam into an optical output path wherein the optical element is a mirror, the lens has a back focal plane, and the mirror is disposed in the back focal plane of the lens except for the mirror being movable.

FIG. 18 PRIOR ART



Papen discloses in Figure 2 an optical apparatus including a laser array 12, a lens 13 collimating light from a laser in the array of lasers; an optical output (output beam); and a movable mirror 16.

For the improvement of the optical transmission apparatus, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide a movable mirror as taught by Papen to Karlsen or Farries in order to tune wavelengths.

Allowable Subject Matter

7. The following is an examiner's statement of reasons for allowance: Claims 1-11 are allowed because the prior art fail to teach or fairly suggest an optical transmission apparatus comprising an array mirrors, each mirror being movable and an array of positioning elements, each element coupled to a corresponding mirror of the array of mirrors and wherein the element includes an actuator and a spring.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Citation of Pertinent References

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Karlsen et al. discloses Incoherent Beam Combined Optical System Utilizing a Lens Array, U.S. Patent No. 6529542

The patent to Farries et al. discloses Semiconductor Laser Pump Source, U.S. Patent No. 5163058

The patent to Ota discloses Optical Link Amplifier and a Wavelength Multiplex Laser Oscillator, U.S. Patent No. 5773345

The patent to Mirov et al. discloses Semiconductor Laser with a Superbroadband or Multiline Spectral Output, U.S. Patent No. 6236666

The patent to Papen et al. discloses External Cavity, Multiple Wavelength Laser Transmitter, U.S. Patent No. 5379310

The patent to Kitamura discloses Optical Scanning Apparatus having an Array of Light Source, U.S. Patent No. 4474442

The patent to Reno discloses Apparatus and Method for Minimizing Magnification Distortion in Multi-Track Optical Recording, U.S. Patent No. 4768184

The patent to Yamaguchi et al. discloses Semiconductor Laser Pumped Solid State Laser System and Optical Coupling Semiconductor Laser with Optical Fiber, U.S. Patent No. 5369661

Communication Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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